

[0059]

WHAT WE CLAIM IS:

1. A portable battery recharge station comprising:

(a) a holder adapted to receive a secondary battery having a voltage requirement;

(b) a programming resistor connected to the holder, wherein the voltage requirement can be determined from the value of the programming resistor;

(c) a supervisory circuit connected to the programming resistor;

(d) a voltage converter connected to the supervisory circuit and the holder; and

(e) a portable power source connected to the voltage converter, wherein when the secondary battery is placed in the holder, the supervisory circuit determines the voltage requirement based on the resistance of the programming resistor,

wherein the supervisory circuit instructs the voltage converter to supply a voltage to the holder in accordance with the voltage requirement, and

wherein the voltage converter receives power from the portable power source, converts the power in accordance with the voltage requirement, and supplies the converted power to the secondary battery.

2. The station of claim 1, wherein the portable power source is one of a replaceable battery, a rechargeable battery, a renewable battery, and a renewable fuel cell.
3. The station of claim 2, wherein the replaceable battery is one of an alkaline battery, a lithium battery, and a zinc-air battery.
4. The station of claim 2, wherein the rechargeable battery is one of a NiCd battery, a NiH₂ battery, a NiMH battery, a Li-ion battery, a Li-polymer battery, a zinc-air battery, and a lead acid battery.
5. The station of claim 4, further comprising a recharger connected to the portable power source, wherein the recharger is adapted to receive energy from an external power source.
6. The station of claim 2, wherein the renewable fuel cell is one of a methanol fuel cell and a renewable electrolyte type cell.
7. The station of claim 6, further comprising a reservoir adapted to contain fuel of the renewable battery.
8. The station of claim 7, further comprising a gauge adapted to measure a level of the fuel.
9. A portable battery recharge station comprising:
 - (a) a plurality of holders each of which is adapted to receive one type of secondary battery;

(b) a plurality of programming resistors each of which is connected to one of the plurality of holders, wherein each of the plurality of programming resistors is associated with a voltage requirement;

(c) a supervisory circuit connected to the plurality of programming resistors;

(d) a voltage converter connected to the supervisory circuit and the plurality of holders; and

(e) a portable power source connected to the voltage converter, wherein when one or more secondary batteries are placed in the plurality of holders, the supervisory circuit determines one or more voltage requirements based on the value of the resistance of the one or more programming resistors that are connected to each of the plurality of holders that have received the one or more secondary batteries,

wherein the supervisory circuit instructs the voltage converter to supply power to the one or more secondary batteries in accordance with the one or more voltage requirements, and

wherein the voltage converter receives power from the portable power source, converts the power in accordance with the one or more voltage requirements, and supplies the converted power to the one or more secondary batteries.

10. The station of claim 9, wherein the portable power source is one of an alkaline battery, a zinc-air battery, a NiCd battery, a NiH₂ battery, a NiMH

battery, a Li-ion battery, a Li-polymer battery, a zinc-air battery, a lead acid battery, a methanol fuel cell battery, and a renewable electrolyte type cell battery.

11. A battery charging system comprising:

(a) a portable battery recharge station having a portable power source, a voltage converter, a supervisory circuit, and at least one socket; and

(b) a device-specific charging cord having a plug adapted to mate with the at least one socket of the portable battery recharge station, a programming resistor, and a connector adapted to mate with a portable device having a secondary battery,

wherein when the connector is mated with the portable device and the plug is mated with the at least one socket, the supervisory circuit determines a voltage requirement of the secondary battery based on the value of the resistance of the programming resistor,

wherein the supervisory circuit instructs the voltage converter to supply a voltage to the secondary battery in accordance with the voltage requirement, and

wherein the voltage converter receives power from the portable power source, converts the power in accordance with the voltage requirement, and supplies the converted power to the secondary battery.

12. The system of claim 11, wherein the portable power source is one of a replaceable battery, a rechargeable battery, a renewable battery, and a renewable fuel cell.
13. The system of claim 12, wherein the replaceable battery is one of an alkaline battery, a lithium battery and a zinc-air battery.
14. The system of claim 12, wherein the rechargeable battery is one of a NiCd battery, a NiH₂ battery, a NiMH battery, a Li-ion battery, a Li-polymer battery, a zinc-air battery, and a lead acid battery.
15. The system of claim 14, further comprising a recharger connected to the portable power source, wherein the recharger is adapted to receive power from an external power source.
16. The system of claim 12, wherein the renewable battery is one of a methanol fuel cell and a renewable electrolyte type cell.
17. The system of claim 11, wherein more than one plug can be mated with the at least one socket so that more than one secondary battery can be recharged concurrently.
18. The system of claim 17, wherein the more than one secondary battery can be associated with different voltage requirements.
19. The system of claim 11, further comprising at least one holder connected to the supervisory circuit and the voltage converter, wherein each of the at least one holder is connected to a programming resistor.

20. The system of claim 19, wherein the at least one holder and the at least one socket are adapted to recharge a common secondary battery.

21. A method for recharging a secondary battery comprising the steps of:

(a) using a supervisory circuit to identify a voltage requirement associated with the secondary battery;

(b) having the supervisory circuit report the voltage requirement to a voltage converter;

(c) receiving energy from a portable power source at the voltage converter, wherein the voltage converter converts the power to meet the voltage requirement; and

(d) supplying the converted power from the voltage converter to the secondary battery.

22. The method of claim 21, wherein the identifying step involves a programming resistor.

23. The method of claim 22, wherein the programming resistor is associated with a holder that is adapted to receive the secondary battery.

24. The method of claim 22, wherein the programming resistor is associated with a device-specific charging cord that is connected to a portable device housing the secondary battery.